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DEPARTMENT OF NATURAL RESOURCES
SUPERFUND DIVISION
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May 11, 2016

Mr. Tom Mahler, On-Scene Coordinator
Superfund Division
United States Environmental Protection Agency, Region 7
11201 Renner Boulevard
Lenexa, Kansas 66219

RE: Comments on Stormwater ARAR Related Documents Submitted with West Lake Landfill Time Critical Removal Action (TCRA) for Non-Combustible Cover

Dear Mr. Mahler:

The Missouri Department of Natural Resources' Federal Facilities Section, in coordination with the Water Protection Program, has completed its review of several documents relating to compliance with stormwater ARARs that are included with the current TCRA for installation of a Non-Combustible Cover over portions of OU-1. Documents reviewed include:

- Revised Stormwater Monitoring During Non-Combustible Cover Construction: West Lake Landfill Operable Unit 1, Bridgeton, Missouri, dated February 23, 2016, revised April 11, 2016 – including response to EPA comments
- Monthly Status Report – March 26: Unilateral Administrative Order for Removal Action, West Lake Landfill Operable Unit 1, Bridgeton, Missouri, dated April 11, 2016

We note that, in a letter dated February 26, 2016, the Department submitted detailed information outlining the substantive requirements for meeting ARARs related to stormwater monitoring and management. To date, these substantive requirements have not been met by the respondents. We request that the EPA ensure that all substantive requirements are met, at minimum, until such time that the regulators receive evidence indicating closure of the landfill has been completed, and that the site does not show evidence of leachate or leachate constituents being discharged from the landfill property.

If you have any questions pertaining to these comments please contact me by phone at (573) 751-8628, or by written correspondence at P.O. Box 176, Jefferson City, MO 65102.

Sincerely,

HAZARDOUS WASTE PROGRAM

Ryan Seabaugh, P.E.
Federal Facilities Section

RS:rld

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Superfund

OU-01 5/11/16

Enclosures: Comments on revised work plan and response to comments
Comments on the March 2016 Monthly Status Report
Table: Calculated Maximum Daily Limit Criteria

c: Mr. Bradley Vann, EPA Region 7
Mr. Chris Wieberg, Water Protection Program

MISSOURI DEPARTMENT OF NATURAL RESOURCES

General Stormwater
Applicable or Relevant and Appropriate Requirement (ARAR)
Comments

1. Figure "Watershed Catchment Areas & Proposed Sampling Locations"

   Comment: There are at least two documented storm water flow paths:
   - One in Area 1 running roughly over the word "Basin 2" and flowing into a constructed storm drain along Saint Charles Rock Road.
   - One in Area 2 Flowing off of "Basin 5" into the Buffer Zone Property and out through a culvert passing under Old Saint Charles Rock Road.
   - Other potential outfall locations should continue to be monitored during each rain event.

   Please include the documented outfalls in the work plan, and document areas that were monitored for potential outfalls

2. Constituents and Limits

   Comment: In our previous comment letter dated February 26, 2016, we provided default Maximum Daily Limits and rationale for using default limits until site-specific limits can be established. Monitoring-only for a pollutant does not mean a discharge of the pollutant will not cause an exceedance of a water quality standard in stream, which is what the ARAR seeks to prohibit. In the absence of any data analysis, a limit should be set at the acute or most protective water quality criteria for each parameter to ensure standards are not violated until enough data has been collected allowing for calculation of site-specific discharge limits.

   Daily maximum limitations should be placed on regulated constituents at the most protective acute aquatic life water quality standard, Human Health Fish Consumption standard, or Livestock Wildlife Watering standard whichever is more protective. Parameters that are hardness dependent are set using a standard stream hardness of 193 mg/L. We are providing calculated daily limit criteria below, and have also included them in Table 1 at the end of these comments.

   Metals
   Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the *Technical Support Document For Water Quality-based Toxic Controls* (EPA/505/2-90-001) and *The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion* (EPA 823-B-96-007). According to the guidance, each metal's total recoverable criterion must be multiplied by a conversion factor to obtain a dissolved criterion that should not be exceeded.

   Most of the freshwater aquatic life criteria are hardness dependent, and an appropriate hardness value is necessary to determine each conversion factor. Since ambient site specific hardness data is not available, a standard water hardness of 193 mg/L for

stormwater is used to calculate appropriate conversion factors. Additionally, when there are no site specific translator studies, partitioning between the dissolved and absorbed phases is assumed minimal (Section 5.7.3, EPA/505/2-90-001). Freshwater criteria conversion factors for dissolved metals were used as the metals translator as recommended in guidance (Section 1.3, 1.5.3, and Table 1, EPA 823-B-96-007). If concurrent site-specific data for total recoverable metals, dissolved metals, hardness, and total suspended solids are provided, the findings may be integrated into derivation of the water quality limits.

Aluminum, Total Recoverable

Maximum daily limit of 750 µg/L. The analytical results dated March 18th, 2016, show 3710 µg/L of aluminum in the effluent. This is an exceedance of the acute water quality standard found in 10 CSR 20-7.031 Table A for protection of aquatic life. The reported value is nearly five times the water quality standard. This indicates a reasonable potential to harm aquatic life, therefore limits are appropriate to protect the general criteria found at 10 CSR 20-7.031 (4)(D) which state, "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal, or aquatic life."

Acute Aquatic life (AQL) Water quality standard (WQS): 750 µg/L
Chronic AQL WQS: none
Conversion factor at hardness 193 mg/L: None
Acute Waste load allocation (WLA) = WQS when no mixing = Maximum daily limit (MDL)
MDL = **750 µg/L**

Antimony, Total Recoverable

Monitoring only. Data reported for March 18th, 2016, shows a non-detect value for antimony in the effluent, with a reporting limit of 50 µg/L. The chronic water quality criterion for protection of human health is set at 4300 µg/L per 10 CSR 20-7.031 Table A. Human health is protected under the general criteria found at 10 CSR 20-7.031(4), which state, "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life." General criteria are applicable to all waters of the state at all times. Because landfills are, by nature, the source of numerous pollutants of untraceable source, it is necessary for monitoring to continue on this parameter.

Arsenic, Total Recoverable

Maximum daily limit of 33 µg/L. The analytical results dated March 18th, 2016 show a non-detect value for arsenic in the effluent, with a reporting limit of 25 µg/L. The chronic water quality criterion for protection of aquatic life is 20 µg/L. The respondent is not utilizing sufficiently sensitive methods for this parameter, as are required by 40 CFR 122.44(i)(1)(iv). 40 CFR 136 lists the approved methods accepted by the Department; however, it should be noted that not all methods listed in 40 CFR 136 are sufficiently sensitive to determine compliance with water quality standards. Because the respondent has not submitted sufficiently sensitive data for making a determination of compliance, it is necessary to place a limit to ensure the respondent both complies with the water quality

standards and uses a method which is sufficiently sensitive enough to determine protection of aquatic life in the receiving stream. Aquatic life is protected under the general criteria found at 10 CSR 20-7.031(4), which state, "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life." General criteria are applicable to all waters of the state at all times.

Acute AQL WQS: none
Chronic AQL WQS: 20
Long Term Average$_{acute}$ (LTA_a): none [CV = 0.6, 99th Percentile]
Long Term Average$_{chronic}$ (LTA_c): 20 (0.527) = 10.54 [CV = 0.6, 99th Percentile]
MDL: 10.54 (3.11) = 32.7794 = **33 µg/L** [CV = 0.6, 99th Percentile]

Beryllium, Total Recoverable
Monitoring only. Data reported for March 18th, 2016, shows a non-detect value for beryllium in the effluent, with a reporting limit of 0.5 µg/L. The chronic water quality criterion for protection of aquatic life is set at 5 µg/L per 10 CSR 20-7.031 Table A. Aquatic life is protected under the general criteria found at 10 CSR 20-7.031(4), which state, "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life." General criteria are applicable to all waters of the state at all times. Because landfills are, by nature, the source of numerous pollutants of untraceable source, it is necessary for monitoring to continue on this parameter.

Cadmium, Total Recoverable
Monitoring only. Data reported for March 18th, 2016, shows a non-detect value for cadmium in the effluent, with a reporting limit of 2 µg/L. The acute water quality criterion for protection of aquatic life is set at 9.8 µg/L per 10 CSR 20-7.031 Table A when hardness is 193 mg/L. Aquatic life is protected under the general criteria found at 10 CSR 20-7.031(4), which state, "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life." General criteria are applicable to all waters of the state at all times. Because landfills are, by nature, the source of numerous pollutants of untraceable source, it is necessary for monitoring to continue on this parameter.

Chromium (III), Total Recoverable
Monitoring only. Data reported for March 18th, 2016, shows a non-detect value for chromium (III) in the effluent, with a reporting limit of 50 µg/L. The chronic water quality criterion for protection of aquatic life is set at 3090 µg/L per 10 CSR 20-7.031 Table A when hardness is 193 mg/L. Aquatic life is protected under the general criteria found at 10 CSR 20-7.031(4), which state, "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life." General criteria are applicable to all waters of the state at all times. Because landfills are, by nature, the source of numerous pollutants of untraceable source, it is necessary for monitoring to continue on this parameter.

Chromium (VI), Dissolved

Maximum daily limit of 15 µg/L. The analytical results dated March 18th, 2016, show a non-detect value for chromium (VI), with a reporting limit of 25 µg/L. The acute water quality criterion for protection of aquatic life is 15 µg/L. The respondent is not utilizing sufficiently sensitive methods for this parameter, as are required by 40 CFR 122.44(i)(1)(iv). 40 CFR 136 lists the approved methods accepted by the Department; however, it should be noted that not all methods listed in 40 CFR 136 are sufficiently sensitive to determine compliance with water quality standards. Aquatic life is protected under the general criteria found at 10 CSR 20-7.031(4), which state, "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life." General criteria are applicable to all waters of the state at all times. Because the respondent has not submitted sufficiently sensitive data for making a determination of compliance with water quality standards, it is necessary to place a limit to ensure the respondent both complies with the water quality standards and uses a method which is sufficiently sensitive enough to determine protection of aquatic life.

AQL WQS: 15 µg/L
Chronic AQL WQS: 10µg/L
Conversion factor at hardness 193 mg/L: None
Acute WLA = WQS when no mixing = MDL
MDL = **15 µg/L**

Cobalt, Total Recoverable

Monitoring only. Data reported for March 18th, 2016 shows a value of 55 µg/L for cobalt. The chronic water quality criterion for protection of livestock watering is set at 1000 µg/L per 10 CSR 20-7.031 Table A. Livestock are protected under the general criteria found at 10 CSR 20-7.031(4), which state, "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life." General criteria are applicable to all waters of the state at all times. Because landfills are, by nature, the source of numerous pollutants of untraceable source, it is necessary for monitoring to continue on this parameter.

Copper, Total Recoverable

Maximum daily limit of 26 µg/L. The analytical results dated March 18th, 2016, show a value of 54.6 µg/L for copper. This is an exceedance of the acute water quality standard found in 10 CSR 20-7.031 Table A for protection of aquatic life, which is 26 µg/L when hardness is 193 mg/L. The reported value is more than two times the water quality standard. This indicates a reasonable potential to harm aquatic life in the receiving stream; therefore, limits are appropriate to protect the general criteria found at 10 CSR 20-7.031 (4)(D), which state, "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal, or aquatic life."

Acute AQL WQS: $e^{(0.9422 * \ln 193 - 1.7003)} * 0.960 = 24.963$ µg/L
Acute Total Recoverable Conversion (TR) WQS: 24.963 ÷ 0.96 = 26.003
Acute WLA: 26.003 = WQS when no mixing = MDL
MDL = **26 µg/L**

Lead, Total Recoverable
Monitoring only. Data reported for March 18th, 2016, shows 19 µg/L of lead in the effluent. The acute water quality criterion for protection of aquatic life is set at 189 µg/L per 10 CSR 20-7.031 Table A when hardness is 193 mg/L. Aquatic life is protected under the general criteria found at 10 CSR 20-7.031(4), which state, "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life." General criteria are applicable to all waters of the state at all times. Because landfills are, by nature, the source of numerous pollutants of untraceable source, it is necessary for monitoring to continue on this parameter.

Mercury, Total Recoverable
Monitoring only. Data reported for March 18th, 2016, shows a value of 0.33 µg/L of mercury in the effluent. The acute water quality criterion for protection of aquatic life is set at 2.4 µg/L per 10 CSR 20-7.031 Table A. Aquatic life is protected under the general criteria found at 10 CSR 20-7.031(4), which state, "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life." General criteria are applicable to all waters of the state at all times. Because landfills are, by nature, the source of numerous pollutants of untraceable source, it is necessary for monitoring to continue on this parameter.

Nickel, Total Recoverable
Monitoring only. Data reported for March 18th, 2016, shows a value of 24.4 µg/L of nickel in the effluent. The acute water quality criterion for protection of aquatic life is set at 819 µg/L per 10 CSR 20-7.031 Table A when hardness is 193 mg/L. Aquatic life is protected under the general criteria found at 10 CSR 20-7.031(4), which state, "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life." General criteria are applicable to all waters of the state at all times. Because landfills are, by nature, the source of numerous pollutants of untraceable source, it is necessary for monitoring to continue on this parameter.

Selenium, Total Recoverable
Maximum daily limit of 8.2 µg/L. The analytical results dated March 18th, 2016, show a non-detect value of selenium in the effluent, with a reporting limit of 40 µg/L. The chronic water quality criterion for protection of aquatic life is 5 µg/L. The respondent is not utilizing sufficiently sensitive methods for this parameter, as are required by 40 CFR 122.44(i)(1)(iv). 40 CFR 136 lists the approved methods accepted by the Department; however, it should be noted that not all methods listed in 40 CFR 136 are sufficiently sensitive to determine compliance with water quality standards. Because the respondent has not submitted sufficiently sensitive data for making a determination of compliance with water quality standards, it is necessary to place a limit to ensure the respondent both complies with the water quality standards and uses a method which is sufficiently sensitive enough to determine protection of aquatic life in the receiving stream. Aquatic life is protected under the general criteria found at 10 CSR 20-7.031(4), which state, "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life." General criteria are applicable to all waters of the state at all times.

Acute AQL WQS: none
Chronic AQL WQS: 5
Long Term Average$_{acute}$ (LTA_a): none [CV = 0.6, 99th Percentile]
Long Term Average$_{chronic}$ (LTA_c): 5 (0.527) = 2.635 [CV = 0.6, 99th Percentile]
MDL: 2.635 (3.11) = 8.1948 = **8.2 µg/L** [CV = 0.6, 99th Percentile]

Silver, Total Recoverable

Monitoring only. Data reported for March 18th, 2016, shows a non-detect value for silver, with a reporting limit of 5 µg/L. The acute water quality criterion for protection of aquatic life is set at 11.7 µg/L per 10 CSR 20-7.031 Table A when hardness is 193 mg/L. Aquatic life is protected under the general criteria found at 10 CSR 20-7.031(4), which state, "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life." General criteria are applicable to all waters of the state at all times. Because landfills are, by nature, the source of numerous pollutants of untraceable source, it is necessary for monitoring to continue on this parameter.

Thallium, Total Recoverable

Maximum daily limit of 10.3 µg/L. The analytical results dated March 18th, 2016, show a non-detect value of thallium in the effluent, with a reporting limit of 50 µg/L. The chronic water quality criterion for protection of human health is 6.3 µg/L. The respondent is not utilizing sufficiently sensitive methods for this parameter, as are required by 40 CFR 122.44(i)(1)(iv). 40 CFR 136 lists the approved methods accepted by the department; however, it should be noted that not all methods listed in 40 CFR 136 are sufficiently sensitive to determine compliance with water quality standards. Because the respondent has not submitted sufficiently sensitive data for making a determination of compliance with water quality standards, it is necessary to place a limit to ensure the respondent both complies with the water quality standards and uses a method which is sufficiently sensitive enough to determine protection of human health for the receiving stream. Human health is protected under the general criteria found at 10 CSR 20-7.031(4), which state, "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life." General criteria are applicable to all waters of the state at all times. Maximum daily limit for thallium is calculated using the *Technical Support Document For Water Quality-based Toxic Controls* (EPA/505/2-90-001), Section 5.4.4, "EPA Recommendations for Permitting for Human Health Protection."

Acute WQS: none
Chronic Human Health-Fish Consumption (HHF/HHP) WQS: 6.3
WQS x (HHF/HHP multiplier) = 6.3 x 1.64 = 10.332 [n = 4, 99th percentile, no mixing]
MDL = **10.3 µg/L**

Zinc, Total Recoverable

Monitoring only. Data reported for March 18th, 2016, shows 152 µg/L of zinc in the effluent. The acute water quality criterion for protection of aquatic life is set at 209 µg/L per 10 CSR 20-7.031 Table A. Aquatic life is protected under the general criteria found

at 10 CSR 20-7.031(4), which state, "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life." General criteria are applicable to all waters of the state at all times. Because landfills are, by nature, the source of numerous pollutants of untraceable source, it is necessary for monitoring to continue on this parameter.

Hydrocarbons

Benzene
Monitoring only. Data reported for March 18th, 2016, shows a non-detect for benzene in the effluent, with a reporting limit of 2 µg/L. The chronic water quality criterion for protection of human health is set at 71 µg/L per 10 CSR 20-7.031 Table A. Human health is protected under the general criteria found at 10 CSR 20-7.031(4), which state, "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life." General criteria are applicable to all waters of the state at all times. Because landfills are, by nature, the source of numerous pollutants of untraceable source, it is necessary for monitoring to continue on this parameter.

Ethylbenzene
Monitoring only. Data reported for March 18th, 2016, shows a non-detect for ethylbenzene in the effluent, with a reporting limit of 5 µg/L. The chronic water quality criterion for protection of aquatic life is set at 320 µg/L per 10 CSR 20-7.031 Table A. Aquatic life is protected under the general criteria found at 10 CSR 20-7.031(4), which state, "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life." General criteria are applicable to all waters of the state at all times. Because landfills are, by nature, the source of numerous pollutants of untraceable source, it is necessary for monitoring to continue on this parameter.

Toluene
Monitoring only. Data reported for March 18th, 2016, shows a non-detect for toluene in the effluent, with a reporting limit of 5 µg/L. The chronic water quality criterion for protection of human health is set at 20,000 µg/L per 10 CSR 20-7.031 Table A. Human health is protected under the general criteria found at 10 CSR 20-7.031(4), which state, "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life." General criteria are applicable to all waters of the state at all times. Because landfills are, by nature, the source of numerous pollutants of untraceable source, it is necessary for monitoring to continue on this parameter.

Xylene
Monitoring only. Data reported for March 18th, 2016, shows a non-detect for xylene in the effluent, with a reporting limit of 5 µg/L. There are no state water quality criteria applicable to the receiving waters of this facility; however, xylene is known to be toxic to aquatic life at varying levels (see sources below). Aquatic life is protected under the general criteria found at 10 CSR 20-7.031(4), which state, "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or

aquatic life." General criteria are applicable to all waters of the state at all times. Because landfills are, by nature, the source of numerous pollutants of untraceable source, and xylene is of known toxicity to aquatic life, it is necessary for monitoring to continue on this parameter.

Sources:

Black, J.A., W.J. Birge, A.G. Westerman, and P.C. Francis. 1983. Comparative aquatic toxicology of aromatic hydrocarbons. Fund. Appl. Toxicol. 3: 353-358

Galassi, S.; Mingazzini, M.; Vigano, L.; Cesareo, D.; Tosato, M.L. 1988. Approaches to Modeling Toxic Responses of Aquatic Organisms to Aromatic Hydrocarbons. Ecotox. Env. Safety. 16(2):158-169.

Oil and grease

Maximum daily limit of 10 mg/L. Data reported for March 18th, 2016, shows 15 mg/L of hexane extractable material in the effluent, another term for "oil and grease". Oil and grease/Hexane extractable materials is a comprehensive test which measures for gasoline, diesel, crude oil, creosote, kerosene, heating oils, heavy fuel oils, lubricating oils, waxes, and some asphalt and pitch. The test can also detect some volatile organics such as benzene, toluene, ethylbenzene, or toluene, but these constituents are often lost during testing due to their boiling points. It is recommended to perform separate testing for these constituents if they are a known pollutant of concern at the site, i.e. aquatic life toxicity or human health is a concern. Results do not allow for separation of specific pollutants within the test, they are reported, totaled, as "Oil and grease." Per 10 CSR 20-7.031 Table A: *Criteria for Designated Uses*; 10 mg/L is the chronic standard for this parameter. 10 mg/L is the level at which sheen is estimated to form on receiving waters. Oils and greases of different densities will possibly form sheen or unsightly bottom deposits at levels which vary from 10 mg/L. To protect the general criteria found at 10 CSR 20-7.031(4), it is the responsibility of the respondent to visually observe the discharge and receiving waters for sheen or bottom deposits, and monitor for hydrocarbon odor.

MISSOURI DEPARTMENT OF NATURAL RESOURCES

Responses and Comments on the
Revised Stormwater Monitoring During Non-Combustible Cover Construction
West Lake Landfill Operable Unit 1, Bridgeton, Missouri, dated February 23, 2016, revised April 11, 2016 – including response to EPA comments

3. Page 2, First paragraph
   The paragraph states: "The fifth drainage basin does not appear to have any organized drainage but instead contributes only overland flow off of Area 2 onto the adjacent Buffer Zone. The surface of the Buffer Zone is flat and visual inspection of the perimeter of the Buffer Zone did not identify any engineered structures or erosional channels that convey stormwater off of the Buffer Zone. The elevation of the adjacent AAA Trailer property and the grade of the alignment of Old St. Charles Rock Road are higher than the surface of the Buffer Zone, effectively preventing discharge of stormwater from the Buffer Zone."

   Comment: From our observations and available photographs, flow off of "Basin 5" in Area 2 into the adjacent Buffer Zone can collect between the rock cover and the adjacent AAA Trailer property at the fence line and drain toward Old St. Charles Rock Road, spill into the drainage area in the vicinity of DNR soil sample location S09, pass through the sediment sampling location identified by EPA, and eventually drain through a nearby culvert that cuts under the grade of Old St. Charles Rock Road. Please identify this as an outfall and apply the stormwater ARAR.

4. Page 2, Third Paragraph
   The paragraph states: "The four potential outfall points will be inspected for stormwater flow during or immediately after rainfall events that are anticipated to result in at least one-quarter inch of precipitation."

   Comment: Please modify the sentence to state "All potential outfall points will be inspected for stormwater flow during or immediately after rainfall events that are anticipated to result in at least one-tenth inch of precipitation."

5. EPA Comment #2 and PRP response:
   Original Comment: "Should a discharge occur, samples shall be collected after any precipitation event greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measureable precipitation event."
   PRP Response: "Previous inspections have indicated that sufficient discharge is unlikely to occur during precipitation events of 0.1 inches to make this an appropriate minimum threshold for monitoring events. Specifically, to date, no flow has occurred at the stormwater monitoring stations during precipitation events greater than 0.1 inch but less than 0.2 inches. For example, the reported precipitation at Lambert - St. Louis International Airport on March 10, 2016, was 0.20 inches. Discharge was only observed to occur at, and samples could only be collected from, Station 001 on that date. Inspection of the monitoring stations 002, 003 and 004 on that date indicated that no discharge was occurring at these stations. Similarly, the reported precipitation at Lambert

St. Louis International Airport on March 30, 2016, was 0.41 inches. Discharge was observed in Stations 002 and 003 on this date; however, no flow was observed at Station 004. Therefore, it is highly unlikely that sufficient discharge will occur during precipitation events of 0.1 inch. Consequently, we propose that this criterion be revised to be based on precipitation events estimated to produce 0.25 inches or more. Specifically, Respondents propose to continue to check for discharge at each monitoring station any time precipitation estimated to exceed 0.25 inches occurs until such time that samples have been collected from each station during a given month."

Response to response: Monitoring should continue for discharges resulting from precipitation events of 0.1 inches or greater in order to establish consistent documentation supporting the assertion that discharge is unlikely to occur at specified precipitation amounts. If discharges do not occur, please document "no discharge."

6. EPA Comment #3 and PRP response:
Original Comment: "All sample analyses shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated."

PRP Response: "Stormwater sample analyses for non-radiological parameters are being performed by the same laboratory and using the same analytical methods that are used to analyze stormwater samples obtained for the Bridgeton Landfill monitoring program. Stormwater sample analyses for radiological parameters are being performed and reported in accordance with procedures previously accepted by EPA for water samples collected from the West Lake Landfill site. The data packages provided by both the laboratories performing the non-radiological and the radiological analyses are Responses to Comments on NCC Stormwater Monitoring required to include sufficient information necessary for independent data validation to assess the precision and accuracy of the results."

Response to response: Please document in the work plan or reference a Quality Assurance Plan showing that non- radiological sampling and analysis techniques will be conducted in such a way that the precision and accuracy of analyzed results can be enumerated, with detection limits low enough to quantify concentrations at the default limits provided.

7. EPA Comment #4 Response to response: Refer to Item 5. Response to response.

8. EPA Comment #8 and PRP response:
Original Comment: "Stormwater discharge of radiological contaminants that are regulated to drinking water Maximum Contaminant Levels (MCLs) shall include Gross Alpha and Beta. These results should be compared to their respective MCLs."

PRP Response: "Gross alpha and gross beta are indicator parameters of radioactivity that are subject to false positives. The stormwater monitoring plan, by comparison, includes analyses of specific radioisotopes, which provide more definitive determinations of potential radionuclide occurrences in the stormwater samples such that Respondents do

not see the value in performing monitoring for gross alpha and beta. Furthermore, even though MCLs exist for these parameters (gross alpha and beta), EPA did not include these parameters as part of the comprehensive groundwater monitoring programs conducted in 2012 and 2013; rather, EPA required analyses for specific radionuclides (such as Respondents have included here). Accordingly, Respondents respectfully disagree with this comment, and respond that gross alpha and beta sampling need not be included in the stormwater testing."

Responses to response:

- We are unaware of false positives being encountered when testing for gross alpha and beta, please analyze for gross alpha and beta.
- Please compare results for gross alpha and beta to MCLs. If alternative methods are proposed, and can ensure compliance with the ARAR, please provide a proposal for consideration.
- As a reminder, parameters are set based on compliance with the federal Clean Water Act pursuant to the national goal of protecting fish, shellfish, and wildlife and recreation in and on the water as outlined in Section 101 (a)(2) of the Act.

9. Comment #10 and PRP response:
Original Comment: "The North and Northwest property boundaries of Area 2 shall be evaluated to determine whether any discharges can occur at this portion of Area 2. If discharges do occur, samples shall be collected and analysis conducted in accordance with this letter. If no discharges occur, this should be documented."

PRP Response: "Beginning with the April monitoring activities, the northern and northwest boundaries of Area 2 will be examined for possible discharge. Such examination will be performed from the top of Area 2 (i.e., from along the margins of the recently installed NCC). In the event that any discharge is observed, the field crew will (subject to the permission of adjacent property owner(s)) inspect the property boundary for possible discharge and if discharge is observed, collect samples."

Responses to response:

- It is our understanding that there is currently an access agreement with AAA Trailer and should be an access agreement with all other adjacent properties north of area 2.
- Additional potential outfall locations may exist that are not visible from the top of Area 2 from along the margins of the recently installed NCC. Please obtain sufficient access agreements with adjacent properties, and do appropriate monitoring to ensure that stormwater runoff from all of Area 2 is controlled.

10. Comment #11 and PRP response:
Original Comment: "The EPA requires that storm water be monitored and reported during field construction activities associated with the NCC and until the EPA approves the final report for this action. Once approved by the EPA, the final report will demonstrate that the cover has been adequately placed over areas where RIM is located at or near the surface."

PRP Response: The stormwater monitoring program calls for collection of stormwater samples during the period when construction of the NCC is occurring; that is, when there is a potential for ground disturbance. Therefore, stormwater monitoring should end upon completion of all construction work associated with the NCC. Based on the time expected to be required to prepare a report, for EPA review of that report, and for one or more cycles of report revision and additional review, we are concerned that extending the period of monitoring until the final report is approved by EPA could entail many months of additional monitoring beyond the period of active ground disturbance. Accordingly, we therefore propose instead that stormwater monitoring cease when the construction contractor demobilizes from the site; in the event that EPA subsequently determines that additional NCC work is required, stormwater monitoring would then resume upon re-mobilization of a construction contractor to the site and continue to occur for the duration of any subsequent construction periods.

Responses to response:

Regarding the period and/or duration of stormwater monitoring:

1. Until surface RIM is confirmed to be covered, and until there is documented approval that surface RIM is effectively covered and stabilized, stormwater monitoring should be required as part of this TCRA action.
2. Additionally, stormwater monitoring should be performed beyond the final report as a performance measure of the effectiveness of the non-combustible cover in the temporary stabilization of surface and near surface RIM until the final remedy is in place; as well as ensure that runoff from the rock cover continues to meet all stormwater ARARs. This includes monitoring chemicals of concern that were not covered by the rock cover in addition to general water quality criteria such as total suspended solids.
3. Finally, Stormwater ARARs are applicable and relevant for all of OU-1 until such time, at a minimum, that formal closure of the site is obtained.

MISSOURI DEPARTMENT OF NATURAL RESOURCES

Comments on the

Monthly Status Report – March 26: Unilateral Administrative Order for Removal Action, West Lake Landfill Operable Unit 1, Bridgeton, Missouri, dated April 11, 2016

1. Page 3, second paragraph:
   Comment: This paragraph on stormwater monitoring does not provide discussion of monitoring potential outfalls along the northern portion of Area 2 during this month. Please document past and scheduled work related to monitoring for potential outfall locations.

2. Page 3, second paragraph:
   Comment: There is no visual documentation showing that any outfalls were dry on either sampling date. Please include photographic documentation that outfalls were dry during rain events.

3. Page 3, second paragraph:
   Comment: Total amount of precipitation from events where samples were collected is not noted in the monthly report. Please document the total precipitation in monthly reports.

4. Page 3, second paragraph:
   Comment: Please provide visual comparison of stormwater results to daily limit criteria and discuss exceedances. Please also discuss any proposed or implemented stormwater management control improvement with a schedule of implementation.

5. Page 3, Item 3 – Work Scheduled to Be Performed during April 2016:
   Comment: Please document scheduled work related to monitoring potential outfall locations north of Area 2.

Table 1: Calculated Maximum Daily Limit Criteria Using 193 ug/L Hardness

Parameter	Unit	Max Daily Limit	Monthly Average Limit
Aluminum Total Recoverable	ug/L	750	Monitoring only
Antimony, Total Recoverable	ug/L	4300	Monitoring only
Arsenic, Total Recoverable	ug/L	33	Monitoring only
Beryllium, Total Recoverable	ug/L	5	Monitoring only
Cadmium, Total Recoverable	ug/L	9.8	Monitoring only
Chromium (III), Total Recoverable	ug/L	3090	Monitoring only
Chromium (VI), Dissolved	ug/L	15	Monitoring only
Cobalt, Total Recoverable	ug/L	1000	Monitoring only
Copper, Total Recoverable	ug/L	26	Monitoring only
Lead, Total Recoverable	ug/L	189	Monitoring only
Mercury, Total Recoverable	ug/L	2.4	Monitoring only
Nickel, Total Recoverable	ug/L	819	Monitoring only
Selenium, Total Recoverable	ug/L	8.2	Monitoring only
Silver, Total Recoverable	ug/L	11.7	Monitoring only
Thallium, Total Recoverable	ug/L	10.3	Monitoring only
Zinc, Total Recoverable	ug/L	209	Monitoring only
Benzene	ug/L	71	Monitoring only
Ethylbenzene	ug/L	320	Monitoring only